

WHAT IS CLAIMED IS:

1. A method of transferring a flexible material web from an upstream section to at least one downstream section of a machine having a web running direction, said machine being configured for at least one of manufacturing and treating the material web, said method comprising:

5 providing two separation elements;

using said two separation elements to split and thereby separate the material web into an edge strip, an adjoining transfer strip and a remaining web adjoining the transfer strip, the edge strip extending in the web running direction, the transfer strip having a side;

deflecting the edge strip to the side of and away from the transfer strip; and

10 simultaneously tautening the edge strip during said deflecting step.

2. The method of claim 1, wherein the material web is one of a paper web and a cardboard web, the machine being a paper machine.

3. The method of claim 1, wherein the step of deflecting further comprises the sub-steps of:

providing at least one air jet proximate the edge strip; and

using said at least one air jet to deflect the edge strip.

4. The method of claim 1, further comprising the step of guiding the edge strip to one of a pulper and a waste container.

5. The method of claim 1, wherein said edge strip has a relevant web edge, a first of said separation elements being disposed most closely to the relevant web edge, said first of said separation elements being activated first in order to produce the edge strip, a second of said

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separation elements being subsequently activated to produce the transfer strip after tautening and
5 deflection of the edge strip.

6. The method of claim 1, wherein said edge strip has a relevant web edge and the remaining web has an opposite web edge and a second of the separation elements is further disposed from the relevant web edge, and further comprising the steps of:

transferring the transfer strip to at least one downstream machine section; and
5 thereafter moving the second of the separation elements to the opposite web edge to separate the remaining web.

7. The method of claim 1, wherein the edge strip has a relevant web edge and a first of the separation elements is disposed most closely to the relevant web edge, and further comprising the steps of:

transferring the transfer strip to at least one downstream machine section; and
5 thereafter moving the first of the separation elements to the relevant web edge to separate the edge web.

8. The method of claim 1, wherein the edge strip has a relevant web edge, and further comprising the step of transferring the transfer strip, the transfer strip being produced in the region of the relevant web edge at least at a start of the transferring step.

9. The method of claim 1, wherein the edge strip has a relevant web edge, the transfer strip being first produced at a smaller spacing to the relevant web edge, the spacing to the relevant web edge being subsequently enlarged by an appropriate movement of at least one of said separation elements in a direction transverse to the web running direction.

10. The method of claim 9, wherein the remaining web has an opposite web edge, a maximum spacing of the transfer strip to the relevant web edge being smaller than a spacing thereof to the opposite web edge.

11. The method of claim 8, wherein the transfer strip is accordingly positioned by a movement of at least one of said separation elements in a transverse direction with respect to at least one said downstream machine section.

12. The method of claim 11, wherein the transfer strip is positioned such that ultimately the whole width thereof is taken up in an appropriate downstream machine section.

13. The method of claim 9, wherein said at least one downstream machine section includes at least one first machine section and at least one further machine section, the transfer strip being first produced at a smaller spacing to the relevant web edge for a transfer thereof into said at least one first machine section, the spacing to the relevant web edge being subsequently enlarged for a transfer of the transfer strip into said at least one further machine section, the enlarging occurring due to an appropriate movement of at least one separation element in the transverse direction.

14. The method of claim 1, wherein the machine has a transverse direction relative to the web running direction, and further comprises the step of appropriately moving at least one of said separation elements in the transverse direction in order to set a desired width of the transfer strip.

15. The method of claim 1, wherein each said separation element works one of in a non-contact manner and as a mechanical cutting element.

16. The method of claim 15, wherein at least one said separation element works in a non-contact manner, said at least one said separation element being one of a water jet and a laser beam separation element.

17. The method of claim 15, wherein at least one said separation element works as a mechanical cutting element, said at least one said separation element being one of a knife and a circular knife element.

18. The method of claim 15, wherein said machine is a paper machine including at least a last drying cylinder, each said separation element working in a non-contact manner, the separating occurring on the last drying cylinder.

19. The method of claim 15, wherein each said separation element is a mechanical cutting element, the separating occurring in a non-supported run of the material web.

20. The method of claim 1, further comprising guiding a portion of the material web into one of a pulper and a waste container at a start of the separating.

21. The method of claim 1, wherein both separation elements are applied within the material web, the separating accordingly beginning therewithin.

22. The method of claim 1, wherein at least one said separation element is activated outside the material web.

23. The method of claim 12, wherein the edge strip and the remaining web are led into one of a pulper and a waste container up to a point where the whole width is taken up.

24. The method of claim 1, further comprising the step of transferring the transfer strip to said at least one downstream section via at least one auxiliary transfer device.

25. The method of claim 24, wherein each auxiliary transfer device is one of a rope guide, a transfer belt and an air guide device.

26. The method of claim 1, wherein the edge strip has an approximate width of 50 mm to 300 mm.

27. The method of claim 26, wherein the edge strip has an approximate width of 50 mm to 250 mm.

28. The method of claim 1, wherein the transfer strip has an approximate width of 50 mm to 400 mm.

29. The method of claim 28, wherein the transfer strip has an approximate width of 50 mm to 200 mm.

30. The method of claim 1, wherein the edge strip has a relevant web edge, the machine having at least one of a support edge and an auxiliary guide, the transfer strip having a first strip edge most disposed most closely to the relevant web edge, the first strip edge being spaced more than approximately 150 mm from said at least one of a support edge and an auxiliary guide.

31. The method of claim 1, wherein the edge strip has a relevant web edge, the machine having at least one of a support edge and an auxiliary guide, the transfer strip having a first strip edge most disposed most closely to the relevant web edge, the first strip edge being spaced approximately 150 mm to approximately 1000 mm from said at least one of a support edge and an auxiliary guide.

32. An apparatus for transferring a flexible material web from an upstream section to at least one downstream section of a machine having a web running direction, said machine being configured for at least one of manufacturing and treating the material web, said apparatus comprising:

two separation elements configured for splitting and thereby separating the material web into an edge strip, an adjoining transfer strip and a remaining web adjoining the transfer strip, the edge strip extending in the web running direction, the transfer strip having a side; and

at least one deflection device configured for deflecting the edge strip to the side of and away from the transfer strip and simultaneously tautening the edge strip upon deflection thereof.

33. The apparatus of claim 32, wherein at least one said deflection device is an air jet configured for direction at the edge strip.

34. The apparatus of claim 32, wherein at least one said deflection device is a guide apparatus provided for deflecting the edge strip.

35. The apparatus of claim 34, wherein said guide apparatus has a guide surface which, considered in the web running direction, begins in a flat plane for first receiving the edge strip and then merges therefrom into a curved, outwardly extending contact surface for the edge strip.

36. The apparatus of claim 35, wherein said guide apparatus comprises a plurality of at least essentially planar guide panels provided with side walls, said guide panels being arranged in cascade form.

37. The apparatus of claim 36, wherein there are three guide panels.

38. The apparatus of claim 32, further comprising an electronic control for controlling movement of said separation elements, said separation elements being controllably movable in a direction transverse to the web running direction.

39. The apparatus of claim 32, wherein said edge strip has a relevant web edge, a first of said separation elements being configured to be disposed most closely to the relevant web edge, said first of said separation elements being configured to be activated first in order to produce the edge strip, a second of said separation elements being configured to be subsequently activated to produce the transfer strip after tautening and deflection of the edge strip.

40. The apparatus of claim 32, wherein said edge strip has a relevant web edge and the remaining web has an opposite web edge, a second of the separation elements being configured to be further disposed from the relevant web edge, said second of the separation elements being configured to be moved to the opposite web edge to separate the remaining web upon transferring the transfer strip to at least one downstream machine section.

41. The apparatus of claim 32, wherein the edge strip has a relevant web edge, a first of the separation elements being configured to be disposed most closely to the relevant web edge, said second of the separation elements being configured to be moved to the relevant web edge to

separate the edge strip upon transferring the transfer strip to at least one downstream machine
5 section.

42. The apparatus of claim 32, wherein the edge strip has a relevant web edge, the apparatus being configured for producing the transfer strip in the region of the relevant web edge at least at a beginning of a transfer procedure.

43. The apparatus of claim 32, wherein the edge strip has a relevant web edge, the apparatus being configured to first produce the transfer strip at a small spacing to the relevant web edge, at least one of said separation elements being configured for movement in a direction transverse to the web running direction and for thereby subsequently enlarging the spacing of the
5 transfer strip to the relevant web edge.

44. The apparatus of claim 43, wherein the remaining web has an opposite web edge, the apparatus being configured to control a maximum spacing of the transfer strip to the relevant web edge so as to be smaller than a spacing thereof to the opposite web edge.

45. The apparatus of claim 43, wherein said at least one of said separation elements is configured for moving in a transverse direction with respect to at least one said downstream machine section and for accordingly positioning the transfer strip.

46. The apparatus of claim 45, wherein the apparatus is configured so as to position the transfer strip such that ultimately the whole width thereof is taken up in an appropriate downstream machine section.

47. The apparatus of claim 43, wherein said at least one downstream machine section includes at least one first machine section and at least one further machine section, the apparatus being configured for first producing the transfer strip at a smaller spacing to the relevant web edge for a transfer thereof into said at least one first machine section, the spacing to the relevant
5 web edge being subsequently enlarged for a transfer of the transfer strip into said at least one

further machine section, the enlarging occurring due to an appropriate movement of at least one separation element in the transverse direction.

48. The apparatus of claim 32, wherein said separation elements are conjunctively configured for movement in a manner appropriate to set a desired width of the transfer strip, the movement of each separation element being in a direction transverse to the web running direction.

49. The apparatus of claim 32, wherein each said separation element is configured to work one of in a non-contact manner and as a mechanical cutting element.

50. The apparatus of claim 49, wherein at least one said separation element is configured to work in a non-contact manner, said at least one said separation element being one of a water jet and a laser beam separation element.

51. The apparatus of claim 49, wherein at least one said separation element is configured to work as a mechanical cutting element, said at least one said separation element being one of a knife and a circular knife element.

52. The apparatus of claim 49, wherein said machine is a paper machine including at least a last drying cylinder, each said separation element working in a non-contact manner, the separating occurring on the last drying cylinder.

53. The apparatus of claim 49, wherein each said separation element is a mechanical cutting element, the separating occurring in a non-supported run of the material web.

54. The apparatus of claim 32, wherein both separation elements are configured to be applied within the material web and accordingly beginning the separating therewithin.

55. The apparatus of claim 32, wherein at least one said separation element is configured to be activated outside the material web.

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FOOTNOTES

56. The apparatus of claim 32, further comprising at least one auxiliary transfer device configured for transferring the transfer strip to said at least one downstream section.

57. The apparatus of claim 56, wherein each auxiliary transfer device is one of a rope guide, a transfer belt and an air guide device.

58. The apparatus of claim 32, wherein said separation elements are conjunctively configured for controlling a width of the edge strip within an approximate range of 50 mm to 300 mm.

59. The apparatus of claim 58, wherein the approximate range is 50 mm to 250 mm.

60. The apparatus of claim 32, wherein said separation elements are conjunctively configured for controlling a width of the transfer strip within an approximate range of 50 mm to 400 mm.

61. The apparatus of claim 60, wherein the approximate range is 50 mm to 200 mm.

62. The apparatus of claim 32, wherein the edge strip has a relevant web edge, the machine having at least one of a support edge and an auxiliary guide, the transfer strip having a first strip edge most disposed most closely to the relevant web edge, the apparatus being configured such that the first strip edge is spaced more than approximately 150 mm from said at least one of a support edge and an auxiliary guide.

63. The apparatus of claim 62, wherein the edge strip has a relevant web edge, the machine having at least one of a support edge and an auxiliary guide, the transfer strip having a first strip edge most disposed most closely to the relevant web edge, the apparatus being configured such that the first strip edge is spaced approximately 150 mm to approximately 1000 mm from said at least one of a support edge and an auxiliary guide.